

22/890.14

What is claimed is:

- سأب ٥١> 1. A method for forming a sealed joint between two thin walled metallic pipe ends of an overhead pipe system for enclosing a plurality of fluid conduits comprising the steps of:
- holding the thin walled pipe;
 - cutting the thin walled pipe ends for properly squaring each pipe end;
 - rounding each squared pipe end with a mandrel for providing uniform pipe ends;
 - installing a steel coupling proximate to one end of one of the pipes;
 - aligning the two pipe ends with an alignment device in an abutted end to end orientation;
 - applying a sealer tape to the abutted ends of the two pipes; and
 - clamping the steel coupling over the sealer tape which renders the sealed joint leak proof and provides structural integrity.
2. The method of claim, wherein the steps of holding and cutting the thin walled pipe comprises the steps of:
- installing the thin walled pipe into a vice apparatus;
 - using a vice apparatus having a first semi-tubular member pivotally clamped to a second semi-tubular member at a hinge, said second semi-tubular member having a length less than the length of the first semi-tubular member and positioned at one end of the first semi-tubular member, said second end having an aperture proximate to the other end for receiving a post for connecting said vice apparatus to a support structure and dowel members for aligning the first semi-tubular member to the support structure.
3. The method of claim 1, wherein the step of aligning the two pipe ends comprises the step of:
- providing an alignment device having a pair of cylindrical clamps communicating with each other via a handle, wherein each end of the handle is connected to one of the cylinder clamps for maintaining said clamps in a fixed, spaced and parallel relationship to each other.

10039805 " 101901

4. The method of claim 3, wherein the step of aligning the two pipe ends further comprises the steps of:

closing one of the cylinder clamps around the first of the two pipes and aligning the end of the first pipe to a mark on the handle, and closing the other cylinder clamp around the second of the two pipes and aligning the end of the second pipe to the mark on the handle.

5. The method of claim 1, wherein the step of applying a sealer tape includes the step of:

using a sealer tape made of foam closed cell substance and having an adhesive with a normal tensile strength to aluminum at room temperature of at least 50 lbs/in².

6. The method of claim 1, further comprising the step of:
using a metallic pipe made of one of an aluminum alloy, galvanized steel, and copper.

Sub A → 7. A system for forming a sealed joint between two thin aluminum pipe ends of an overhead pipe system for enclosing a plurality of fluid conduits, the system comprising:

means for holding the thin metallic pipe;
means for cutting the pipe ends for properly squaring the ends;
means for rounding each squared pipe end;
an alignment holder for aligning the two pipe ends in an abutted end to end orientation;
a steel coupling;
a sealer tape for applying to the abutted ends; and
means for clamping the stainless steel coupling over the sealer tape to render the sealed joint leak proof and to provide structural integrity.

10039805-101901

8. The system of claim 7, wherein the alignment device comprises a pair of clamps spaced from each other and communicating with each other via a handle.

9. The system of claim 8, wherein the clamps of the alignment device can selectively open and close around a pipe having a predetermined size.

10. The system of claim 9, wherein the pair of clamps align the two pipe ends in a parallel relationship.

11. The system of claim 7, wherein the sealer tape has the properties of being made of a foam closed cell substance having a normal tensile strength to aluminum at room temperature of at least 50 lbs/in².

285/ 5.0. > 12. A sealed joint for an overhead pipe system for a fluid distribution system, the sealed joint comprising:

- a pair of thin wall metallic pipe ends, each having a squared cut end and a rounded cross-sectional configuration, said pair of pipe ends positioned in a parallel and an abutted end to end relationship to each other;
- a sealer tape applied around the abutted pipe ends, wherein the sealer tape has a first end and a second end and said second end forms an overlap of the first end around said pipe ends; and
- a steel coupling clamped over the sealer tape.

13. The sealed joint of claim 12, wherein the steel coupling has means for clamping said coupling and wherein the means for clamping is positioned over the sealer tape.

14. The sealed joint of claim 12, wherein the pair of thin walled metallic pipe ends are butted as close together as possible.

10039805 101901

26 9/

15. A vice apparatus for securely holding a pipe over a workstation during a cutting process so that the pipe is not crushed, the apparatus comprising:

a cradle for holding the pipe;

means for connecting the apparatus in a cantilever style above the workstation;

means for selectively securing the pipe in the cradle; and

means for aligning the cradle over the workstation.

16. The vice apparatus of claim 15, wherein the means for aligning the cradle over the workstation includes dowels for disposing between the workstation and the cradle, said dowels having an arcuate surface for receiving a portion of the cradle.

17. The vice apparatus of claim 16, wherein the means for connecting the apparatus in a cantilever style includes a post connectable to the cradle at one end of the post and to the workstation at the other end of the post.

18. An alignment device for securing and aligning the ends of two pipes, the alignment device comprising:

a pair of pipe clamps spaced from each other by a handle attached to each pipe clamp, said pipe clamps each having an open position and closed position.

19. The alignment device of claim 18, wherein each of the pipe clamps has essentially a circular configuration when said pipe clamp is in the closed position, and said circular configuration of one pipe clamp is parallel to the circular configuration of the other pipe clamp.

20. The alignment device of claim 19, wherein the handle has a mark thereon for indicating the position of the end of the pipe when said pipe is secured in the pipe clamp.

add A₁>

add A₂>

10039805, 101901